

## ABSTRACT

5 A method of JPEG compression of an image frame divided  
up into a plurality of non-overlapping, tiled 8 x 8 pixel blocks  
B<sub>ij</sub> where i, j are integers covering all of the blocks in the  
image frame. A global quantization matrix Q is determined by  
either selecting a standard JPEG quantization table or selecting  
a quantization table such that the magnitude of each quantization  
matrix coefficient, Q<sub>ij</sub>, is inversely proportional to a visual  
10 importance, I<sub>ij</sub>, to the image of a corresponding DCT basis vector.  
Next a linear scaling factor S<sub>ij</sub> is selected which defines bounds  
over which the image is to be variably quantized. Transform  
coefficients, D<sub>ijmn</sub>, obtained from a digital cosine transform of  
B<sub>ij</sub>, are quantized and the quantized coefficients T<sub>ijmn</sub> and Q \* S<sub>min</sub>  
15 are entropy encoded, where S<sub>min</sub> is a user selected minimum scaling  
factor, to create a JPEG image file. The algorithm is unique in  
that it allows for the effect of variable-quantization to be  
achieved while still producing a fully compliant JPEG file.